

Paper made of Straw

OBSERVATIONS

ON

THE IMPORTANCE AND USE

OF THE

HUMAN TEETH;

WITH A VIEW TO SUGGEST THE NECESSITY OF ATTENDING TO THE
MEANS OF THEIR

PRESERVATION,

AND THE REMOVAL OF THEIR

D I S E A S E S.

By JAMES BLADEN RUSPINI,

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SURGEON-DENTIST TO HIS ROYAL HIGHNESS THE PRINCE OF WALES.

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ADVERTISEMENT.

THE following Observations are written merely to suggest the necessity of attending to the Preservation of the Teeth, in consideration of their importance in the animal œconomy; but the subject is only imperfectly sketched, and scarce begun. Its further Illustration, together with a Description of the various Diseases to which the Teeth and the neighbouring parts are liable, and the methods of removing and alleviating these Diseases, will be contained in a future Publication.

The Plate hereto prefixed is an Engraving of the Operative Instruments for the Teeth.

Fig. 1. Two instruments for extracting the Teeth. They are made upon an improved principle, by having a *moving fulcrum*; it facilitates the extraction of the Teeth, and renders the operation less dangerous; the letter *A* is the handle, *B* the claw, and *C* the *moving fulcrum*.

Fig. 2. Two new invented instruments for scaling the Teeth *internally*, *A* for the right side, and *B* for the left.

Fig. 3. Two instruments *for stopping up hollow Teeth*. *A* may be made use of as an actual cautery, and *B* for stopping up the cavity of the Tooth.

Fig. 4. and 5. The common scaling instruments in general practice, except each handle is attached to the instrument, by which means the operator has a greater purchase.

Fig. 4.

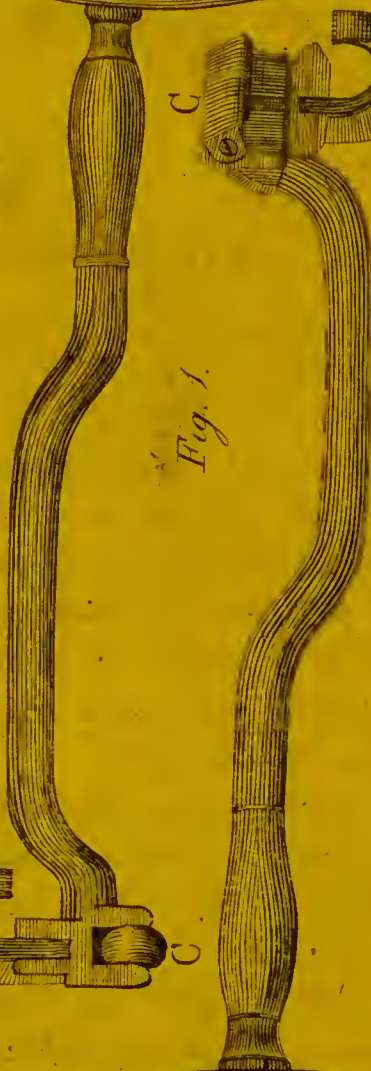


A



C

Fig. 1.



B



A

Fig. 3.



B

B



C

A

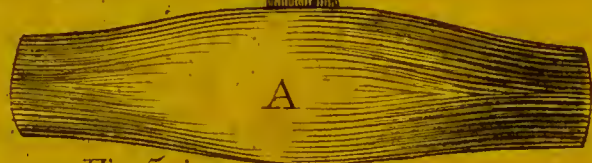


Fig. 5.



A



Fig. 2.

B



TO

CHEVALIER BARTHOLEMEW RUSPINI,

OF PALL-MALL, LONDON.

WHEN I consider the many important services rendered by you to Science in general, and particularly your raising from obscurity, and establishing the profession of a Surgeon-Dentist, upon scientific principles, and consequently the first who practised this useful art in Britain, I feel no inconsiderable degree of confidence in submitting the following Observations to your perusal, previous to a future publication. Nor am I induced so to do from the consideration of being your Son, but with a view of promoting your labours for the good of Society at large, and your various discoveries in Medicine, which have answered every expectation; particularly your Balsamic Styptic Solution, so highly and justly approved of by Medical Gentlemen of the first eminence, and sanctioned by the first persons of rank and respectability in the Three U-

nited Kingdoms, as well as on the Continent, and in the East and West Indies ; who have also aided that charitable institution, (the Royal Free-Mason School), so liberally patronised by our Royal Grand Master, the Prince of Wales, for the maintenance and education of helpless innocence, of which you was the sole Institutor, and which will rank your name high in the list of Philanthropists, and must ever be a source of the most pleasing reflection to me, who has the honour to be

Your SON,

and

Obedient humble Servant,

JAMES BLADEN RUSPINI.

St Andrew's Street, Edin. }
February 1803: }

OBSERVATIONS

ON THE

TEETH.

THAT the Teeth are of great importance in the animal œconomy, is a fact which needs no proof by argument. Nature has designed them for the division of our food into minute parts, from which two considerable advantages are derived: *First*, The food is brought into the most convenient state for mixing with, and being acted upon, by the gastric fluid: *Secondly*, By the act of mastication, the action of the salivary glands is excited, and the fluid secreted in them is squeezed out, mixed with the food, and conveyed with it to the stomach, where it appears considerably to assist, with the gastric fluid, in effecting the process of digestion.

When we reflect, then, on the important purposes which the Teeth are destined to serve in the animal œconomy, we cannot but regret their premature destruction, arising from various diseases in the Teeth and the neighbouring parts, by which these useful agents are rendered unserviceable, or perhaps totally lost. Many of these diseases are produced by the carelessness and inattention of the individual, and might be easily prevented; or, when the disease has commenced, if proper assistance is called in due time, might be easily removed.

At an early period of life, in many persons, we observe not only the Teeth decayed, but the beautiful colour lost,

and their substances destroyed ; infomuch, that they are either totally incapable of masticating the food, or they perform their office very imperfectly. Now, we cannot avoid supposing, that in those cases where the food is presented to the gastric juice in an improper form, and unaccompanied with the proper quantity of saliva, the digestive process must be carried on in a very imperfect manner ; and hence a foundation is laid for the most formidable diseases.

This is a point which, as far as I know, has hitherto escaped the notice of our ablest physiologists and pathologists ; to me it appears to deserve particular consideration. May not some diseases originate from an imperfect digestion, caused by the deficiency of saliva which I have just mentioned ? And might not these diseases be removed by the sufferer employing a proper *succedaneum* ? The nature of the saliva is but little known, and its use in the digestive process still less : But perhaps, by a proper attention to this point, a new field might be opened in pathology, and in the animal physiology.

It is an indisputable truth, that the Teeth contribute greatly to the beauty or deformity of the face ; and they are absolutely necessary to every individual for the purpose of mastication : they also appear to be nearly as useful in assisting to form the human voice. The loss of a few Teeth will destroy the most harmonious voice, and leave only the power of uttering discordant sounds. But the preservation, purity, and perfection of these necessary agents, are indispensable to all public speakers or orators, whether in the senate, at the bar, in the pulpit, or on the stage.

In another point of view, the Teeth are of equal importance to the fair sex ; that is, as being conducive to beauty. Are not our feelings shocked, when we observe

the most beauteous features disfigured by yellow or blackened Teeth? How is our disgust excited by the fœtid smell arising from carious Teeth and diseased Gums? We may add to these, the semblance of immature old age, which we often observe in the hollow cheeks, collapsed lips, and protruding chin, produced often by the total loss of Teeth.

If the Teeth, then, are of such singular use in the animal œconomy, so important to the formation of the human voice, and are so essential to the beauty of the individual, that branch of medical science which has for its object the preservation of the Teeth and Gums, and the cure of the diseases to which they are liable, must be regarded as of the highest importance to mankind, and the practice as no less respectable than any other branch of the healing art.

It is, however, to be regretted, that the profession of a Surgeon-Dentist has been subjected to much odium; *first*, From its not having been regularly studied by men of science; and, *secondly*, From the practice of the art having been often assumed by the most illiterate of mankind.

An erroneous opinion has prevailed, that the Teeth of Children do not require the advice or assistance of a skilful Surgeon-Dentist: It is also a prevalent opinion, and which my practice every day convinces me of, that the inhabitants of Britain are more liable to the decay of the Teeth, and diseases of the Gums, than those of other parts of Europe. This is probably owing, in a great measure, to the want of proper attention. In France and Italy, where the Teeth of the natives are, in general, perfect and durable, it may be observed, that very great attention is given to them in the early stages of life, but principally during the whole time of the second dentition; for, if the new Teeth are badly arranged, misplaced, or crowded, and permitted to remain so, they will soon in-

sure each other. The advice of a skilful practitioner is, therefore, extremely requisite at this period: By altering the disposition of some, and removing of others, the remainder may be preserved in health and beauty.

From want of proper attention during the second dentition, numberless persons in Britain have had those Teeth destroyed, which might have remained entire through life; and it were well that parents and guardians of children were sufficiently aware of this important and striking fact*.

The accumulation of Tartar is a disease to which the Teeth of children, as well as adults, are very liable. The assistance of a skilful practitioner is, in this case, absolutely necessary to prevent its pernicious effects. It is a common and destructive disease; and, as it often is not commonly regarded, it is extremely proper to give an account of its seat and consequences, to evince the necessity of its speedy removal.

The following singular case of Dentition merits attention: The third son of Major-General R——— was in his fourth year before he had any appearance of Teeth. He eat of every thing with his other brothers, although still without a single Tooth, his gums being grown sufficiently hard to masticate all kinds of meat, and other things presented at table. Yet it caused great inquietude for the dangerous conflict that was likely to ensue, when the Teeth should cut through the gums: And to the astonishment of the medical gentlemen who attended the family, he cut his Eye-teeth (*Dentes Canini*) in his fifth year, without his scarcely perceiving it, as every thing in this case was out of the ordinary course of nature. The *Dentes Molares* or Grinders came next in the same year, but it was not till his seventh year that the *Incisores* or Front. Teeth made their appearance, notwithstanding these Teeth are generally the first that appear.

The neck of the tooth is an intermediate part between its crown and the root ; but it is much softer than the crown. Nature has formed the Gum for its particular preservation, which, in the perfect state of the parts, adheres closely round it. If the Gum should, by disease or accident, be separated from the neck of the Tooth, so that it becomes exposed to the air, or any extraneous matter, a decay will inevitably ensue, unless timely prevented. Therefore the adhesion of Tartar, which begins to form on the exposed part of the Tooth, and by degrees insinuates itself under the Gums, even into the socket, is an evil that requires to be immediately removed, and proper remedies applied, that the Gum may be restored to its natural state.

I say proper remedies ; for there are some practitioners, surely a disgrace to the profession in which they attempt to practise, when they remove this Tartar by the use of mineral acids, and, as they state, without any injury whatever to the Teeth, merely with a view to gain credit for whitening them ; when, in the end, the patient who has put so much confidence in such empirical pretensions, discovers, when it is too late, that natural beautiful colour lost, and the enamel totally destroyed. Every professional man, who has the least scientific knowledge or reflection, will at once agree, that the acid, which can dissolve the calcareous substance of the Tartar, must at the same time destroy the enamel of the Teeth ; nor is the application of gritty powders less prejudicial *. It is evi-

* Dr Blake, in his Essay on the Structure and Formation of the Teeth in Man and Various Animals, asserts that cream of tartar is also very injurious to the enamel of the Teeth, termed by him *Cortex Striatus*. To ascertain the bad effect of which, he made the following simple experiment, which will at once explain how detrimental the use of it must be, even in the

dent, therefore, that when the Tartar has been suffered to accumulate, there is no other proper remedy than that of scaling the Teeth by the hand of an experienced operator *.

From whatever occasional or secondary cause the Tartar proceeds, the principal one is certainly negligence. It hath been called, by some, a cancer, because it corrodes

smallest proportion. " I placed a tooth in a solution of cream
 " of tartar and water, and allowed it to remain in it for about
 " twelve hours ; when taken out, I observed that the surface
 " of the *cortex striatus* was quite rough, and according as it be-
 " came dry, it appeared sprinkled over with an immense num-
 " ber of small crystals, though very few were observable on
 " the root. The formation of these crystals can easily be ac-
 " counted for : the acid of the tartar has a greater affinity to
 " calcareous earth, than it has to the vegetable alkali, with
 " which it is combined in cream of tartar. A double elective
 " attraction of course takes place. When a tooth is immersed in
 " a solution of it, the acid of tartar combines with the lime,
 " and forms a salt nearly soluble in water, and which is de-
 " posited in the form of crystals on the body of the Tooth,
 " whilst the other portions, *scil.* the vegetable alkali and phos-
 " phoric acid, &c. combine, and remain dissolved in the mix-
 " ture. Likewise in cream of tartar, the vegetable alkali is
 " supersaturated with the acid of tartar, so that even in pow-
 " der, and without a complete decomposition of it, we see how
 " readily it may act as a solvent for the *cortex striatus*, which
 " is seemingly the chief part acted on by it, the bony part, as
 " already mentioned, being covered with scarcely any of the
 " crystals. When a Tooth is placed in dilute acid of tartar,
 " the body of it becomes covered in the same space of time,
 " with much larger crystals."

* The necessity of this operation is strongly inculcated by the late ingenious Mr John Hunter, F. R. S. in the *Natural History of the Human Teeth*, vide page 125.

the Gums and Sockets in such a manner, that the Teeth will fall out for want of support. It is generated by the fragment of aliments that stick to the Teeth, by a vitiated saliva, or by an improper digestion, &c.

Whenever this viscid matter is allowed to stick to the Teeth, it grows hard, and degenerates into Tartar, and will augment by degrees, from new particles of aliments continually joining the old ones. But this would never happen if the Teeth were carefully and regularly cleaned every morning with something proper for that purpose. The Tartar is a kind of crust, not only disagreeable to the eye, but also productive of very fætid exhalations *.

There are various sorts of Tartar, viz. the Yellow, the Whitish, the Black, and even the Green Tartar. The latter is the most pernicious, as it often destroys the enamel. The lower Incisores (or front Teeth) are more subject to the Tartar, chiefly in their internal side, because of their vicinity to the tongue, and part of the saliva sticking there.

The accumulation of Tartar on the Teeth is likewise productive of disease in the Gums; from their being de-

* The animal fluids, when out of the general circulation, especially when they stagnate in cavities, are apt to deposit an absorbent earth, and form concretions. The same sort of deposition takes place likewise when there is any substance with such properties, as render it a fit basis for crystallization; as when extraneous bodies are lodged in the bladder; whence such bodies are so often found to form the nucleus of a stone. The same thing happens in the bowels of many animals; whence the nucleus of intestinal concretions or bezoars is commonly a nail or some indigestible substance which had been swallowed. The crust which forms on the Teeth seems to be a crystallization of the same nature.

prived of their proper situation, and constantly irritated by the Tartar.

The diseases of the Gums are,

1. Sponginess and inflammation.——They become hot, spongy, inflamed, and are liable to bleed on the slightest irritation. When these symptoms appear, the disease is vulgarly termed *Scurvy*.

2. Scorbutical and scrophulous affections, callosities, and excrescences formed on the Gums.

3. Gum-biles. These are in general the consequence of decayed Teeth; we find them in young and middle-aged people more frequently than in old, but they appear to be most common to the shedding Teeth.

Sometimes these affections are owing to a general depravation of the constitution; but most frequently they are produced by local causes. In either case, there is a particular morbid action in the vessels of the Gums and neighbouring parts, which may be considered as the more immediate cause of disease. Hence local applications are indicated.

If the Teeth happen to be decayed or painful, it has been the general custom to send for the next Tooth-drawer, who commonly has no idea of cure, but by extirpating the Tooth; a practice replete with ignorance and barbarity, often followed by dangerous, and sometimes fatal consequences, and which, therefore, never should be performed, except in those cases where no other remedy promises any probability of success. As there are a great variety of causes of pain in the Teeth and Gums, so there are various remedies by which ease may be procured; but these, like all other diseases to which every part of the human frame is more or less liable, require the knowledge of *skilful* and *experienced* practitioners for their cure.

It may be here not improper to observe, that when a Tooth is decayed, the corresponding one, by coming in contact, is also injured ; and it is a matter difficult to explain, why a Tooth, in a similar place on the other side, becomes affected. There can be no doubt, however, of this being the case, when Dr Monro, that celebrated Professor of Anatomy and Physiology, (in that justly-distinguished University of Edinburgh), asserts it. However unable we may be to account for its exciting causes, it is requisite that a skilful practitioner should be consulted ; and should there be a cavity, it ought to be filled either with gold, silver, or lead leaf, which will prevent the air penetrating therein ; but, if neglected even for a short time, must be a source of excruciating pain, and in the end the loss of the Tooth will be unavoidable.

The pain in the Teeth proceeds in a great measure from the air coming into contact with the nerve in the cavity of the Tooth ; for we seldom see people affected with the Toothach, but when the cavity is exposed to the air. The destruction of the nerve may in this case be effected by the application of the actual or potential cauteries.

Gold and lead are the metals generally made use of for stopping the cavities of the Teeth. Gold being less pliable, must be used in the leaf ; lead is so soft in any form as to take on any shape by a very small force.

Stopping hollow Teeth with wax, gum, mastic, galbanum, &c. can be but of little service, as it is in most cases impossible to confine these substances, or preserve them from being soon worn away ; however, they have their uses, as it is a practice which patients themselves can very easily put in execution.

Inflammatory Toothach is sometimes occasioned by a determination of blood to the part, sometimes an increased ac-

tion of the neighbouring vessels, and a consequent inflammation or caries of the Tooth; a swelling of the cheek succeeds by sympathy; and thereby the violence of the pain is, in some instances, relieved. Hence a diseased Tooth may render the neighbouring parts irritable, and frequently cause *hemisrania*, which only can be cured by extraction of the Tooth. Blisters behind the ears may sometimes give temporary relief. Women are more liable to Tooth-achs and Inflammations of the Gums during pregnancy than at any other period, perhaps from the particular sympathy of the nerves. Young people who take too much sugar or sweetmeats, generally have their gums corroded, and they become hot, inflamed, and spongy. This disease should by no means be neglected. The cause should first be removed, and proper astringent and stimulant remedies administered.

It is the property of all animal substances, which are not in an active state, to become putrid, and injurious to the neighbouring parts. The secretions of the mouth and throat, from their inactive state during sleep, become viscid, lodge about the Teeth and Gums, and render the breath offensive, even in the most healthful constitutions. In like manner, particles of the food and other substances will be insinuated between the interstices of the Teeth, and corrupt them. Hence it becomes necessary to clean the Teeth with proper Dentrifices, every night and morning, and to wash the mouth with water after eating. In short, the efforts of the Surgeon-Dentist will be rendered in some degree useless, unless the patient contributes to the preservation of the Teeth, by a proper attention to cleanliness.

In this place it may not be improper to recommend a caution of material consequence, which is, that whenever a Tooth is drawn, particularly any of the *Incisores* (or

front Teeth), it ought to be replaced immediately with an artificial one; which, besides the use and beauty of it, is absolutely necessary to the preservation of the remaining Teeth; otherwise, if the vacancy is suffered to remain, the adjoining Teeth will not continue so firmly fixed in their sockets, but naturally lean towards each other, so as, in course of time, to loosen all the rest: And, in this case, Mr Ruspini must beg leave to inform those who have been so unfortunate as to have lost their Teeth, that he is possessed of the means of supplying the deficiency of nature by an improved method, which, for durability and beauty, he flatters himself cannot be excelled, and which he believes has not before been attempted in Britain.

The method of supplying such deficiency with artificial Teeth has long been known, and has for many years been practised by different artists in Britain; but we have not as yet been able to excel those in France; as it is there to be remarked, that new discoveries and inventions are frequently taking place in this useful art *.

The transplanting of human Teeth from one subject to another, is an operation which requires more chirurgical and physiological knowledge than any other which comes under the attention of a Surgeon-Dentist, and where there ought to be greater caution observed. Much likewise depends on the patient. The only Teeth that should be transplanted are the *Incisores* and *Cuspidati*, they having only single fangs. The transplanting of dead Teeth is, in my opinion, to be preferred, as a greater quantity of dead Teeth can be easier procured than of living ones.

The late Monsieur Fouchard of Paris was perhaps the first scientific man in Europe who professed this ingenious

* An ingenious French artist in Paris some years ago invented a mineral paste for making artificial Teeth, &c.

art, and consequently practised it in France with deserved reputation.

The structure of the Teeth and Gums, their connection each with the other, their diseases, and the method of treatment, have been the study of Mr Ruspini's life. Educated first in the profession of a Surgeon, he afterwards studied the diseases of the Teeth, &c. under the tuition of Monfieur Calatan, that celebrated Surgeon-Dentist at Paris, and having also practised for some years with his father in London, he hopes it cannot be thought improper in him to publish those few Observations. They are merely intended to caution those who have hitherto been careless of the preservation of their Teeth, not to remain so any longer. Numbers of persons who have applied to him in the course of the practice of his profession, in these Kingdoms, as well as on the Continent, have furnished him with melancholy examples of the dreadful havock made by that parent of disease, negligence.

For this purpose Mr Ruspini begs leave to recommend the use of his father's Dentrifice Powder and Tincture for cleansing, preserving, and beautifying the Teeth; also his Elixir for curing the Toothach; the peculiar stimulant and astringent qualities of which will be found efficacious in restoring the natural disposition, and that perfect harmony which is required between the action of the vessels of the Gums, and the neighbouring parts. On these principles the operation of these medicines removes the diseases of the Gums and Sockets, and enables them to give that support to the Teeth which Nature hath designed.

They are peculiarly adapted for the preservation of the Teeth and Gums; and in persevering in the daily use of them, they will be preserved from decay, and keep the breath pure; they are pleasant to the taste, and destructive to nothing but disease.

